

## Remarks

Claims 1, 2, 5 to 24, and 33 to 37 are pending for consideration in the application. No amendments are made herein because the claims are allowable as is. Reconsideration and withdrawal of the rejections are respectfully requested in view of the following remarks.

Claims 1, 2, 5 to 24, and 33 to 37 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Oosterling et al.*, U.S. Patent 6,578,516. No other reference was cited, which is a change from the June 29, 2010 action in which the claims were rejected on the combination of *Oosterling et al* in view of *Maier*.

It is noted that in the June 29, 2010 action, the examiner acknowledged the shortcomings of *Oosterling et al.* and used *Maier* as a teaching of those omissions. (June 29, 2010 action at pp 2-3.) In particular, the examiner acknowledged that “Oosterling does not explicitly disclose using a detector and determination device as claimed.” (June 29, 2010 action at pp 2-3.) *Maier* was then used as a disclosure of “a detection device ...for recording and analyzing particles within a milk sample and determining particle types accordingly.” (June 29, 2010 action at pp 2-3.)

In the latest action, *Maier* (in combination with *Oosterling et al.*) is only used to reject claims 16 and 35, and the examiner relies on *Oosterling et al.* alone as a teaching of the inventions recited in claims 1, 2, 5 to 24, 35 to 37.

As for the alleged teachings of *Oosterling et al*, at pages 2 to 3 of the latest action it states, “Since *Oosterling* already teaches identifying *what* the particle is, knowing these characteristics about the particle is obvious because it helps to determine whether there is contamination, what the source of the contamination is, and how serious it is.” Emphasis added. Applicants note that determining “what” is detected by *Oosterling et al.* is limited to blood residue and milk flakes. *Oosterling et al.* discloses only detecting blood residue and milk flakes

and admits that it should be used with a dark colored filter to aid in that identification. (*Oosterling et al.*, col. 2, lines 57 to 62.) “The contamination, blood residues or flakes of milk which have been formed as a result, for example, of an infection in the udder, which are present in the milk, are collected on the filter material 9 and become visible thereon, for example because the filter material 9 is of a dark color.

Applicants emphasize that their claim 1, for example, recites a method including the step of distinguishing between particles and non-particles, and a particle object type as either a mineral particle object or a biological particle object. These types of objects and bubbles were known at the time *Oosterling et al.*’s disclosure, yet it provides no teaching, suggestion or motivation to make the mineral/biological particle distinction. Applicants explained this fact in their application at paragraph 24, which states, “According to the invention, determination of the quality of milk depends not only on the mere detection of particles but in particular on recognition of particles i.e. the particle type. The invention allows to analyze [sic] the type so as to enable a distinction not only between particle-containing milk and particle-free milk but so that also particles are classified.” It is not understood why the examiner ignores this statement and imposes his opinion of obviousness instead.

The examiner’s latest interpretation of *Oosterling et al.* is that the camera 6 and processing unit (col. 3, lines 18 to 48) are now enough to replace the alleged teachings of *Maier*. It is true that there is a camera and processing unit disclosed in *Oosterling et al.* at col. 3, lines 36 to 41. Nonetheless, the “type” of contamination detected is only blood and milk flakes (biological), and it is not capable of detecting and distinguishing the types of contamination detected by the present invention.

*Oosterling et al.* does not detect the type of contaminants detected by the present invention and is therefore deficient because it will not accurately detect biological objects if it is “confused” by mineral objects and/or non-particle objects, for example. As part of the *Graham* determination it is necessary to determine what one skilled in the art would have been taught by *Oosterling et al.* *Oosterling et al.* claims a 1998 priority date. Certainly particles, such as mineral objects, bubbles, and straw were all possible contaminants of milk samples in 1998. Yet, despite having to contend with these various contaminants, *Oosterling et al.* only attempted to detect blood residue and flakes of milk, and used dark filters to compensate for the rest.

Despite all of the types of contaminants that were possible in 1998, *Oosterling et al.* taught only the detection of blood residues and milk flakes.” That is all that one skilled in the art would have learned from *Oosterling et al.* at the time the present invention was made. But that same artisan would not have learned to detect mineral particle objects, non-particle objects, or others even though they would likely have been present in the *Oosterling et al.* filter.

Indeed, their presence in the filter is what caused devices like *Oosterling et al.* to be unreliable because *Oosterling et al.* would apparently be unable to distinguish blood residue and milk flakes from mineral particles, straw, and bubbles. This type of deficiency is explained in the Background portion of the present application (as published) at paragraph 16, which states,

Since crucial criteria for a perfect quality of milk include not only an absence of particles but in particular an absence of clots-because clot-containing milk indicates an udder inflammation which would prohibit that it enter the food chain-it is imperative to recognize and separate clot-containing milk. In addition to the prior art described in WO 00/67559, EP 1126 757 B1 and DE 101 31 781 C1 have disclosed other devices and methods for examining milk for particles. The mere detection of particles is, however, not sufficient for determining the quality of milk since a checking for the presence of particles may degrade good quality milk as clot-containing milk if foreign matter such as straw, sand, ... have entered it. This cannot be entirely excluded even after cleaning the udder since cleaning may have been performed inadequately or improperly. It is

readily possible that air bubbles or foam are identified as particles.  
Conventional devices and methods do not allow a distinction.

The last sentence summarizes the deficiencies of *Oosterling et al.* i.e. it does not allow for a distinction between particle objects, non-particle objects, mineral particles, and biological particles even though bubbles and mineral particles were well known. As explained in this application, detecting blood is not as simple as it may seem because other contaminants on the filter can and will cause the detection device to be confused or misread the degree of blood contamination, for example. Prior devices were unable to distinguish blood from mineral particles, straw, and bubbles, for example.

That is where the present invention takes an important step. This invention uses an object recognition rule over and above what was processed by *Oosterling et al.* and the art discussed in the Background of this application, for example. Thus, the rejections are in essence saying, *Oosterling et al.* failed to apply an object recognition rule that would distinguish non-particles from particles and mineral particles from biological particles, but it would have been obvious to improve on that even though *Oosterling et al.* admits that it does not accomplish that goal and compensates with the use of a dark filter. It cannot be denied that *Oosterling et al.* failed to distinguish between mineral and biological particles and, thus failed to teach, motivate, or suggest the present invention.

This is not conjecture on Applicants' part. As stated above, *Oosterling et al.* defines the contamination of milk in the following way: "The contamination, blood residues or flakes of milk which have been formed as a result, for example, of an infection in the udder, which are present in the milk, are collected on the filter material 9 and become visible thereon, for example

because the filter material 9 is of a dark color.” (column 2, lines 54 to 63). Thus, *Oosterling et al.* did not consider mineral particles, non-particles, or straw.

This application’s Figures 3 and 4 and the related descriptions at paragraphs 102 to 129, explained how this invention is able to make the distinctions *Oosterling et al.* failed to disclose. Indeed, the best *Oosterling et al.* discloses is the use of a dark filter to compensate for some of what the processor could not do, i.e. reduce inaccuracies. Furthermore the inventors of this application have invented multiple object recognition rules R1-R25 as recited in paragraphs 140 and 141 of the published application.

The claims cannot be rejected without some other teaching, motivation, or suggestions from that reference or the art as a whole to modify that reference. The examiner asserted that *Oosterling et al.* discloses a method of determining milk quality by examining the milk with a detector 1, applying an object recognition rule (camera 6 and a processing unit, col. 3, lines 19 to 48). The examiner acknowledged that the *Oosterling et al.* objective recognition rule does not distinguish between particle and non-particle or between a mineral or biological particle, but the examiner asserts that such a rule would have been obvious to one of ordinary skill in the art. This conclusion contradicts *Oosterling et al.*

The contradiction is apparent when considering that the best *Oosterling et al.* could manage was the use of a dark filter to hide some of the non-biological matter that was collected. As stated above, this was necessary because *Oosterling et al.* had a blood residue detection system that could not distinguish mineral particles from biological particles, as claimed in the present invention. Thus, even *Oosterling et al.* practically admits that its detection system cannot distinguish mineral particles from biological particles, and yet the examiner says that it would have been obvious to include such a feature in an object recognition rule. The examiner’s

conclusion actually contradicts *Oosterling et al.*'s admission about the limits of its detection abilities. *Oosterling et al.*'s own admissions of inadequacy should not be ignored in favor of the examiner's summary conclusion of obviousness, or why minerals, bubbles and straw are ignored by *Oosterling et al.* even though they must have been present. (Spec., para. 16.)

### **Relevant Laws**

To establish a *prima facie* case of obviousness a three-prong test must be met. First, there must be some suggestion or motivation, either in the references or in the knowledge generally available among those of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success found in the prior art. Third, the prior art reference must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991). *See* M.P.E.P. §2143. This is modified by the motivation flowing from (1) the prior art references, (2) the knowledge of the skilled technologist, or (3) the nature of the problem being solved. *In re Dembiczak*, 775 F. 3d 994 (Fed. Cir. 1999). This rule has been clarified as being flexible in allowing a reason to combine that may not be limited to a teaching, suggestion or motivation. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007).

Here, as explained in detail above, there is no suggestion or motivation to create an object recognition rule that distinguishes particles from non-particles, and mineral objects from biological objects. The first prong of the test is not met.

Further, there is no reasonable expectation of success that *Oosterling et al.* could be modified to distinguish minerals from biological particles because *Oosterling et al.* does not disclose it (as the examiner admits), and *Oosterling et al.* uses only a dark filter to aid in identifying blood residue and milk flakes. (col. 2, lines 54 to 67.) So, the second prong of the test is not met.

Finally, the prior art does not teach or suggest all of the claim limitations. The examiner acknowledges this fact at page 2, paragraph 4 of the action. Thus, the third prong of the test is not met.

The three-prong test for obviousness is not met by the rejections in the latest office action, and it cannot be met because *Oosterling et al.* simply failed to teach, suggest or motivate one skilled in the art to arrive at the claimed invention. Thus, the claims would not have been obvious under 35 U.S.C. §103(a) to one skilled in the art.

It appears that the examiner is, in essence, making an improper “obvious to try” rejection of the claims. In other words, “it would have been obvious to try and improve the object recognition rule of *Oosterling et al.* to cure the deficiencies of the *Oosterling et al.* object recognition rule. The examiner acknowledges that *Oosterling et al.* fails to disclose an object recognition rule that distinguishes minerals from biological particles. *Oosterling et al.* also acknowledges that detecting blood residue and milk flakes is difficult and dark filters aid in making the detection. Yet despite these admissions, the examiner asserts that it would have been obvious to improve the prior art in spite of itself. This is improper, and Applicants, therefore, request withdrawal of the rejections for this additional reason. Claim 1 and all of its dependent claims are, therefore, allowable.

Claims 16 and 35 were also rejected under 35 U.S.C. §103(a) as being unpatentable over *Oosterling et al.* in view of *Maier, Jr.*, U.S. Patent 6,571,731. The examiner applied *Oosterling et al.*, as described above, and further that *Oosterling et al.* discloses detecting parameters through transmissive readings. The examiner contended that *Maier, Jr.* teaches a device for detecting particles that are trapped by a filter and the objects are detected by a loss of intensity of light radiation as it is transmitted through the filter. Claims 16 and 35 are allowable for the

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reasons explained above in relation to the shortcomings of *Oosterling et al.* Thus, even when combined with *Maier*, there is no teaching, suggestion or motivation in the art of record to arrive at the claimed invention.

In addition to the reasons stated above as to the allowability of claim 1 and the rest of the claims (which all depend from claim 1), claims 7, 11, 14, 15, 18, and 22 are allowable because *Oosterling et al.* fails to teach, motivate or suggest: locating a boundary of the object as part as part of an object recognition rule (claim 7); deriving an object parameter from an outer contour of an object (claim 11); specifying a plurality of object parameters to determine an object *type* (claim 14); employing fuzzy logic to vary a plurality of parameters for a detected object (claim 15); the elements of claim 16; uses incident lighting (claim 18); or removing an object with an extractor (claim 22). Thus, these claims are allowable for these additional reasons.

## **Conclusion**

For the foregoing reasons, Applicants respectfully submit that the pending claims are allowable, and request that this case be passed to issue.

Respectfully submitted,

/Jeffry W. Smith/  
Jeffry W. Smith, Reg. No. 33455  
Attorney for Applicant  
SMITH LAW OFFICE  
8000 Excelsior Drive, Suite 301  
Madison, WI 53717  
(608) 824-8300